Rui Wang

List of Publications by Year
in descending order

106 papers	1,635 citations	331670 21 h-index	395702 33 g-index
106 all docs	106 docs citations	106 times ranked	1546 citing authors

#	Article	IF	Citations
1	Generalized-stacking-fault energy and surface properties for HCP metals: A first-principles study. Applied Surface Science, 2010, 256, 3409-3412.	6.1	91
2	Ab initio calculations of generalized-stacking-fault energy surfaces and surface energies for FCC metals. Applied Surface Science, 2010, 256, 6345-6349.	6.1	89
3	The prediction of a family group of two-dimensional node-line semimetals. Nanoscale, 2017, 9, 13112-13118.	5.6	58
4	Recipe for Dirac Phonon States with a Quantized Valley Berry Phase in Two-Dimensional Hexagonal Lattices. Nano Letters, 2018, 18, 7755-7760.	9.1	54
5	Phase stability, mechanical properties and electronic structure of TiAl alloying with W, Mo, Sc and Yb: First-principles study. Journal of Alloys and Compounds, 2016, 658, 689-696.	5.5	53
6	Ideal type-III nodal-ring phonons. Physical Review B, 2020, 101, .	3.2	53
7	The stability and the nonlinear elasticity of 2D hexagonal structures of Si and Ge from first-principles calculations. Physica B: Condensed Matter, 2011, 406, 4080-4084.	2.7	50
8	The structural stability, mechanical properties and stacking fault energy of Al3Zr precipitates in Al-Cu-Zr alloys: HRTEM observations and first-principles calculations. Journal of Alloys and Compounds, 2016, 681, 96-108.	5.5	49
9	Structural stability, mechanical properties and stacking fault energies of TiAl3 alloyed with Zn, Cu, Ag: First-principles study. Journal of Alloys and Compounds, 2016, 666, 185-196.	5.5	47
10	Local charge states in hexagonal boron nitride with Stoneâ€“Wales defects. Nanoscale, 2016, 8, 8210-8219.	5.6	43
11	First principle study on the temperature dependent elastic constants, anisotropy, generalized stacking fault energy and dislocation core of NiAl and FeAl. Computational Materials Science, 2015, 103, 116-125.	3.0	40
12	Hourglass phonons jointly protected by symmorphic and nonsymmorphic symmetries. Physical Review B, 2021, 104, .	3.2	35
13	First-principles calculations on third-order elastic constants and internal relaxation for monolayer graphene. Physica B: Condensed Matter, 2010, 405, 3501-3506.	2.7	32
14	Temperature effects on the generalized planar fault energies and twinnabilities of Al, Ni and Cu: First principles calculations. Computational Materials Science, 2014, 88, 124-130.	3.0	31
15	Energy investigations on the adhesive properties of Al/TiC interfaces: First-principles study. Physica B: Condensed Matter, 2014, 449, 269-273.	2.7	30
16	First-principles investigations on structure stability, elastic properties, anisotropy and Debye temperature of tetragonal LiFeAs and NaFeAs under pressure. Journal of Physics and Chemistry of Solids, 2017, 104, 243-251.	4.0	30
17	First-Principles Investigations on Structural and Elastic Properties of Orthorhombic TiAl under Pressure. Crystals, 2017, 7, 111.	2.2	27
18	First principles study on the phase stability and mechanical properties of MoSi2 alloyed with Al, Mg and Ge. Intermetallics, 2015, 67, 26-34.	3.9	24

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19	Edge dislocation core structures in FCC metals determined fromab initiocalculations combined with the improved Peierlsâ€“Nabarro equation. Physica Scripta, 2011, 83, 045604.	2.5	23
20	Effects of Ni vacancy, Ni antisite, Cr and Pt on the third-order elastic constants and mechanical properties of NiAl. Intermetallics, 2014, 55, 108-117.	3.9	23
21	First-principles study on the adhesive properties of Al/TiC interfaces: Revisited. Computational Materials Science, 2017, 126, 108-120.	3.0	23
22	Intrinsic quantum anomalous Hall phase induced by proximity in the van der Waals heterostructure germanene/ <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:mrow><mml:msub><mml:mi>Cr</mml:mi><mml:mn>2</mml:mn></mml:r Physical Review B, 2020, 101, .	3.2	23
23	Electronic Structures of Silicene Nanoribbons: Two-Edge-Chemistry Modification and First-Principles Study. Nanoscale Research Letters, 2016, 11, 371.	5.7	22
24	First-principles determination of dislocation properties in magnesium based on the improved Peierlsâ€“Nabarro equation. Physica Scripta, 2010, 81, 065601.	2.5	20
25	Ab initio calculations on the third-order elastic constants for selected B2â€“MgRE (REÂ=ÂY, Tb, Dy, Nd) intermetallics. Intermetallics, 2010, 18, 2472-2476.	3.9	20
26	Surface Adsorption and Vacancy in Tuning the Properties of Tellurene. ACS Applied Materials & Interfaces, 2020, 12, 19110-19115.	8.0	20
27	Oxidation-Induced Topological Phase Transition in Monolayer 1Tâ€²-WTe₂. Journal of Physical Chemistry Letters, 2018, 9, 4783-4788.	4.6	19
28	A new class of bilayer kagome lattice compounds with Dirac nodal lines and pressure-induced superconductivity. Nature Communications, 2022, 13, 2773.	12.8	19
29	Large-gap quantum anomalous Hall phase in hexagonal organometallic frameworks. Physical Review B, 2018, 98, .	3.2	18
30	First-principles phonon calculations of thermodynamic properties for ductile rare-earth intermetallic compounds. Intermetallics, 2011, 19, 1599-1604.	3.9	17
31	The third-order elastic moduli and pressure derivatives for AlRE (RE=Y, Pr, Nd, Tb, Dy, Ce) intermetallics with B2-structure: A first-principles study. Solid State Communications, 2011, 151, 996-1000.	1.9	16
32	Thermodynamic Properties of MgSc and AlSc from First-Principles Phonon Calculations. International Journal of Thermophysics, 2012, 33, 300-310.	2.1	16
33	The 90Â° partial dislocation in semiconductor silicon: An investigation from the lattice Pâ€“N theory and the first principle calculation. Acta Materialia, 2016, 109, 187-201.	7.9	16
34	Floquet valley-polarized quantum anomalous Hall state in nonmagnetic heterobilayers. Physical Review B, 2022, 105, .	3.2	16
35	Symmetry-enforced nodal cage phonons in <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:mrow><mml:msub><mml:mi>Th</mml:mi><mml:mn>3</mml:mn></mml:r Physical Review B, 2022, 105, .	3.2	16
36	Tunable ferromagnetic Weyl fermions from a hybrid nodal ring. Npj Computational Materials, 2019, 5, .	8.7	15

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37	Weyl nodes with higher-order topology in an optically driven nodal-line semimetal. Physical Review B, 2022, 105, .	3.2	15
38	Dirac Fermions in the Boron Nitride Monolayer with a Tetragon. Journal of Physical Chemistry Letters, 2022, 13, 5508-5513.	4.6	14
39	Ab initiostudy of the thermodynamic properties of rare-earth-magnesium intermetallics MgRE (RE=Y, Dy, Pr, Tb). Physica Scripta, 2011, 83, 065707.	2.5	13
40	First-principles calculations on temperature-dependent elastic constants of rare-earth intermetallic compounds: YAg and YCu. Physica B: Condensed Matter, 2011, 406, 3951-3955.	2.7	13
41	The temperature-dependent elastic properties of B2-MgRE intermetallic compounds from first principles. Physica B: Condensed Matter, 2012, 407, 96-102.	2.7	13
42	Effect of temperature on elastic constants, generalized stacking fault energy and dislocation cores in MgO and CaO. Computational Condensed Matter, 2014, 1, 38-44.	2.1	13
43	The mechanical and electronic properties of Al/TiC interfaces alloyed by Mg, Zn, Cu, Fe and Ti: First-principles study. Physica Scripta, 2015, 90, 035701.	2.5	13
44	First-principles calculations on the stacking fault energy, surface energy and dislocation properties of NbCr2 and HfCr2. Computational Materials Science, 2017, 140, 334-343.	3.0	13
45	Stacking fault energy, yield stress anomaly, and twinnability of Ni ₃ Al: A first principles study. Chinese Physics B, 2015, 24, 077102.	1.4	12
46	Photoinduced Floquet mixed-Weyl semimetallic phase in a carbon allotrope. Physical Review B, 2020, 102, .	3.2	12
47	Crystalline chirality and interlocked double hourglass Weyl fermion in polyhedra-intercalated transition metal dichalcogenides. NPG Asia Materials, 2021, 13, .	7.9	12
48	Dirac Fermions in Graphene with Stacking Fault Induced Periodic Line Defects. Journal of Physical Chemistry Letters, 2021, 12, 10874-10879.	4.6	12
49	On third-order elastic constants for ductile rare-earth intermetallic compounds: AÂfirst-principles study. Intermetallics, 2010, 18, 1653-1658.	3.9	11
50	A lattice theory of the Stone-Wales defect as dipole of dislocation and anti-dislocation. European Physical Journal B, 2015, 88, 1.	1.5	11
51	The temperature-dependent dislocation properties of aluminum from the improved Peierlsâ€“Nabarro model and first-principles. Philosophical Magazine, 2016, 96, 2829-2852.	1.6	11
52	Magnetic field induced valley-polarized quantum anomalous Hall effects in ferromagnetic van der Waals heterostructures. Physical Review B, 2022, 105, .	3.2	11
53	Stoneâ€“Wales defect as a dipole of dislocation and anti-dislocation. Physics Letters, Section A: General, Atomic and Solid State Physics, 2011, 375, 4109-4112.	2.1	10
54	Generalized-stacking-fault energy surfaces for B2-MgRE (RE=Y, Dy, Pr, Tb) intermetallic compounds: Ab initio calculations. Physica B: Condensed Matter, 2011, 406, 967-971.	2.7	10

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55	First-principles calculations of phonon and thermodynamic properties of AlRE (RE = Y, Gd, Pr, Yb) intermetallic compounds. Physica Scripta, 2012, 85, 035705.	2.5	10
56	Elastic properties of magnesium with virtual long-period stacking-ordered structure: First-principles study. Computational Materials Science, 2015, 110, 191-197.	3.0	9
57	Buckling of dislocation in graphene. Physica E: Low-Dimensional Systems and Nanostructures, 2016, 84, 340-347.	2.7	9
58	Effects of Alloying Atoms on Antiphase Boundary Energy and Yield Stress Anomaly of L12 Intermetallics: First-Principles Study. Crystals, 2018, 8, 96.	2.2	9
59	Strong coupling between magnetic order and band topology in the antiferromagnet <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:msub><mml:mi>EuMnSb</mml:mi><mml:mn>2</mml:mn></mml:msub Physical Review B, 2021, 104, .	3.2	9
60	The theoretical investigations of the core structure and the Peierls stress of the Â½ã€ˆ111ã€‰{110} edge dislocation in Mo. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 2010, 527, 4887-4890.	5.6	8
61	First principle study on generalized-stacking-fault energy surfaces of B2-AlRE intermetallic compounds. Physica B: Condensed Matter, 2011, 406, 4529-4534.	2.7	8
62	The Phase Stability, Ductility and Hardness of MoN and NbN: First-Principles Study. Journal of Electronic Materials, 2017, 46, 1914-1925.	2.2	8
63	Electronic Properties of Armchair $$hbox {MoS}_{2}$$ MoS 2 Nanoribbons with Stacking Faults: First-Principles Calculations. Journal of Electronic Materials, 2018, 47, 5498-5508.	2.2	8
64	Interplay of Charged States and Oxygen Dissociation Induced by Vacancies in Phosphorene. Journal of Physical Chemistry C, 2019, 123, 27080-27087.	3.1	8
65	Axial strain and twist-induced changes in the electronic structure of carbon nanotubes. Physica E: Low-Dimensional Systems and Nanostructures, 2010, 42, 2250-2256.	2.7	7
66	Nonlinear elasticity of monolayer zinc oxide honeycomb structures: A first-principles study. Physica E: Low-Dimensional Systems and Nanostructures, 2011, 43, 914-918.	2.7	7
67	First-principles phonon calculations on the lattice dynamics and thermodynamics of rare-earth intermetallics TbCu and TbZn. Intermetallics, 2013, 43, 65-70.	3.9	7
68	The core structure and pseudo-magnetic field of the dislocation in graphene. Europhysics Letters, 2013, 104, 26002.	2.0	7
69	Nonlinear Elastic Properties of Superconducting Antiperovskites MNNi3 (M =Zn, Cd, Mg, Al, Ga, and In) from First Principles. Journal of Superconductivity and Novel Magnetism, 2014, 27, 1851-1859.	1.8	7
70	Third Order Elastic Constants and Debye Temperature of MgB2 Under Different Pressure: First-Principles Methods. Journal of Superconductivity and Novel Magnetism, 2015, 28, 1483-1489.	1.8	7
71	The Adhesive Properties of Coherent and Semicoherent NiAl/V Interfaces Within the Peierls-Nabarro Model. Crystals, 2016, 6, 32.	2.2	7
72	Symmetry-guaranteed ideal Weyl semimetallic phase in face-centered orthogonal C6. Physical Review B, 2020, 101, .	3.2	7

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73	Robust Topological States in Bi₂Se₃ against Surface Oxidation. Journal of Physical Chemistry C, 2020, 124, 6253-6259.	3.1	7
74	The generalized planar fault energy, ductility, and twinnability of Al and Alâ€”RE(RE= Sc, Y,) Tj ETQq0 0 0 rgBT /Overlock 1	1.4	6
75	The Elastic Constants and Anisotropy of Superconducting MgCNi3 and CdCNi3 Under Different Pressure. Journal of Superconductivity and Novel Magnetism, 2014, 27, 1187-1194.	1.8	6
76	Segregation and mechanical properties of Si, Fe and Ti on the Al/Al2.5X0.5Zr (X = Cu, Zn, Ag) coherent interfaces: First-principles calculations. Computational Materials Science, 2018, 141, 325-340.	3.0	6
77	First-principles calculations on finite temperature elastic properties of B2-AlRE (REÂ=ÂY, Tb, Pr, Nd, Dy) intermetallics. Intermetallics, 2012, 26, 57-61.	3.9	5
78	Topological phase transition from T-carbon to bct-C₁₆. New Journal of Physics, 2020, 22, 073036.	2.9	5
79	Photoinduced quantum anomalous Hall states in the topological Anderson insulator. Physical Review B, 2022, 105, .	3.2	5
80	The Elastic Properties, Generalized Stacking Fault Energy and Dissociated Dislocations in MgB2 Under Different Pressure. Journal of Superconductivity and Novel Magnetism, 2013, 26, 3401-3409.	1.8	4
81	Ab initio calculation of the thermodynamic properties and phase diagram of gallium nitride. Physica B: Condensed Matter, 2013, 431, 115-119.	2.7	4
82	Structure of screw dislocation core in Ta at high pressure. Journal of Applied Physics, 2014, 115, 093505.	2.5	4
83	First-Principle Calculations on the Structural, Mechanical, and Electronic Properties of Mn2RuSi and Mn2RuGe Under Pressure. Journal of Superconductivity and Novel Magnetism, 2018, 31, 3667-3677.	1.8	4
84	Topological Quantum States in Magnetic Oxides. Journal of Physical Chemistry Letters, 2020, 11, 4036-4042.	4.6	4
85	The Dirac cone in two-dimensional tetragonal silicon carbides: a ring coupling mechanism. Nanoscale, 2021, 13, 18267-18272.	5.6	4
86	On the core width and Peierls stress of bubble rafts dislocations within the framework of modified Peierls-Nabarro model. Open Physics, 2011, 9, .	1.7	3
87	Energy investigations on the mechanical properties of magnesium alloyed by X = C, B, N, O and vacancy. Frontiers of Materials Science, 2013, 7, 405-412.	2.2	3
88	Pressure induced structural instability of FeV intermetallic compound with B2 ordering. Journal of Alloys and Compounds, 2015, 650, 537-541.	5.5	3
89	Temperature-Dependent Generalized Planar Fault Energy and Twinnability of Mg Microalloyed with Er, Ho, Dy, Tb, and Gd: First-Principles Study. Advances in Materials Science and Engineering, 2016, 2016, 1-9.	1.8	3
90	First Principles Study on Structure Stability and Mechanical Properties of YNi2B2C and LuNi2B2C under Pressure. Crystals, 2017, 7, 173.	2.2	3

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91	The transformation pathways for vitual long period stacking-ordered Mg: First-principles study. Computational Materials Science, 2016, 114, 1-12.	3.0	2
92	Intermediate states and structure evolution in the free-falling process of the dislocation in graphene. Philosophical Magazine, 2017, 97, 759-774.	1.6	2
93	Surface Effects on the Properties of Screw Dislocation in Nanofilms. Advances in Materials Science and Engineering, 2017, 2017, 1-9.	1.8	2
94	Spin-polarized topological phases in a ferromagnetic <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:mrow><mml:msub><mml:mi>Bi</mml:mi><mml:mn>2</mml:mn></mml:msub></mml:mrow></mml:math> bilayer tuned by electric and magnetic fields. Physical Review B, 2022, 105, .	3.7	2
95	First principle study on generalized stacking fault energy and surface energy of B2-AgRE intermetallics. Physica B: Condensed Matter, 2012, 407, 4117-4122.	2.7	1
96	Effect of Pressure on Elastic Constants, Generalized Stacking Fault Energy, and Dislocation Properties in Antiperovskite-Type Ni-Rich Nitrides ZnNNi3 and CdNNi3. Journal of Superconductivity and Novel Magnetism, 2014, 27, 2607-2615.	1.8	1
97	The Core Structure and Peierls Stress of âŒ© 11 2 Â¯ 0 âŒª $langle 11overline {2}0angle $ Dislocations in MgB2 with Mg and B Vacancies. Journal of Superconductivity and Novel Magnetism, 2015, 28, 1743-1748.	1.8	1
98	High temperature and pressure effects on the elastic properties of B2 intermetallics AgRE. Open Physics, 2015, 13, .	1.7	1
99	Structural and electronic properties of 90Â° dislocations in silicon nanorods: A first-principles calculation. Computational Materials Science, 2018, 149, 243-249.	3.0	1
100	Phonon and Thermodynamic Properties in YNi2B2C and LuNi2B2C from First-Principles Study. Journal of Superconductivity and Novel Magnetism, 2018, 31, 1925-1931.	1.8	1
101	Interface Effects on Screw Dislocations in Heterostructures. Crystals, 2018, 8, 28.	2.2	1
102	Topological Rashba-like edge states in large-gap quantum spin Hall insulators. Physical Review Materials, 2018, 2, .	2.4	1
103	(DSF)_n-graphene: a carbon semimetal with double stacking faults. Journal of Materials Chemistry C, 2022, 10, 2103-2108.	5.5	1
104	The dislocation equations of a simple cubic crystal in the isotropic approximation-a solvable model. Acta Mechanica Solida Sinica, 2012, 25, 210-220.	1.9	0
105	Nonlinear Elasticity of Borocarbide Superconductor YNi₂B₂C: A First-Principles Study. Advances in Materials Science and Engineering, 2017, 2017, 1-8.	1.8	0
106	Homogeneous and well-aligned GaN nanowire arrays via a modified HVPE process and their cathodoluminescence properties. Nanoscale, 2022, , .	5.6	0